

Jaenker describes an airfoil member with piezoelectric stack actuators. The piezoelectric actuators described by Jaenker actuate flaps located on an edge of the airfoil member. However, Jaenker does not describe any electrical systems that provide power or control signals to the actuators.

In addition to failing to teach or suggest all of the elements of claim 17, Applicants further submit that the combination of the references in the specific manner urged by the Examiner constitutes improper hindsight reconstruction.

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conditions were contemplated in the designs of the systems in Jang and Hirai. Lastly, Jaenker does not describe any type of control or power system associated with the mechanics of actuating the piezoelectric actuators. The Examiner's assertion that it would have been obvious to combine the references with Jaenker "because it use [sic] actuator systems which are compact, light in weight and not subject to a mechanical tilting displacement or jamming of the actuating components, since the actuating movement is generated from within the solid state bodies" is not a reason to combine references, but is merely a description of the airfoil member described by Jaenker.

Withdrawal of the rejections to independent claim 17, and dependent claims 18-22 and 24-27 under 35 U.S.C. §103(a) is respectfully requested.

Rejection to claim 22 under 35 U.S.C. §103(a):

Claim 22 is rejected under 35 U.S.C. §103(a) as being unpatentable over Hirai in view of Jang, Jaenker and JP 07-046864 to Kurakawa et al. ("Kurakawa").

Kurakawa describes a driver for a piezoelectric actuator for a precision microscope. The device describes a driver that is isolated from the load via a photocoupler. Further, the system measures error and controls the actuator through charging and discharging of the actuator.

Applicants respectfully submit that Hirai, Jang, and Jaenker do not render claim 22 obvious for the reasons discussed above, and Kurakawa does not cure the deficiencies of Hirai, Jang, and Jaenker.

Withdrawal of the rejection to claim 22 under 35 U.S.C. §103(a) is respectfully requested.

Rejections to claims 28 and 29 under 35 U.S.C. §103(a):

Claims 28 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hirai in view of Jang, Jaenker and Kurakawa.

Independent claim 18 recites a method for providing power to a capacitive actuator, comprising the step of "generating a higher-frequency alternating current from a direct voltage

using a frequency generator disposed in the stationary system, the higher-frequency alternating current having an amplitude independent of a phase angle and of an amplitude of a reverse voltage.” This is performed, for example, by matching the generator frequency with the resonant frequency of the series-resonant circuit. *See* Specification, ¶[0051].

It is respectfully submitted that Hirai, Jang, Jaenker, and Kurakawa, alone or in combination, do not disclose this feature. The Examiner asserts that this feature is disclosed by Hirai, Figure 35 and element 361₂. Although element 361₂ of Figure 35 is a high-frequency power generator, there is no indication that the amplitude of the generated signal is “independent of a phase angle and of an amplitude of a reverse voltage.” Hirai merely indicates that the high-power frequency power generator 361₂ is controlled by speed signal S12, and that the high-frequency power generator 361₂ converts the output of direct current power source 361₁. *See* Hirai, col. 26, lines 1-12. Further, Jang, Jaenker, and Kurakawa do not cure this deficiency of Hirai.

Withdrawal of the rejection to claim 28 under 35 U.S.C. §103(a) is respectfully requested.

Independent claim 29 recites features similar to those discussed above with respect to claim 28. Thus, it is respectfully submitted that for at least the reasons discussed above, Hirai, Jang, Jaenker, and Kurakawa do not render claim 29 obvious.

Withdrawal of the rejection to claim 29 under 35 U.S.C. §103(a) is respectfully requested.

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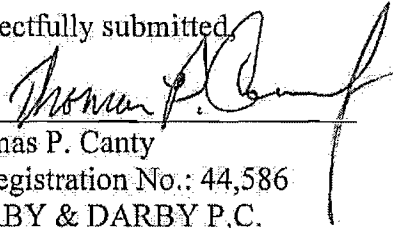
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CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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